

PATENT ABSTRACTS OF JAPAN

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(71) Applicant : NISSIN ELECTRIC CO LTD

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(72) Inventor : DOI AKIRA

(54) DIGESTIVE ORGAN SYSTEM DIAGNOSING APPARATUS

(57) Abstract:

PURPOSE: To diagnose an internal wall of a digestive organ system quickly, inexpensively and at a high accuracy with no pain.

CONSTITUTION: This apparatus is provided with a superminiature LED lamp 1 which flows into a digestive organ system to irradiate inside the system, a super miniature CCD camera 6 which flows into the system and photographs the inside of the system irradiated with a lamp 1 to output an image signal and a monitor TV 14 which receives an image signal to project.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the digestive system diagnostic equipment which diagnoses the body or the wall condition of the digestive system of other animals.

[0002]

[Description of the Prior Art] Conventionally, inspection of the esophagus and the stomach by the radioparency after the periodic medical examination of a digestive system etc. drinks barium etc., diagnosis of the pancreas and the kidney by the ultrasonic wave, large intestine inspection by palpation, etc. are conducted.

[0003] And when abnormalities are found in a periodic medical examination, gastrocamera or a large intestine medical checkup camera is inserted, and still more detailed inspection is conducted.

[0004]

[Problem(s) to be Solved by the Invention] Cost is high, discovery of the initial abnormalities which should be discovered at an early stage is difficult, the conventional periodic medical examination etc. requires advanced medical checkup technology, and gastrocamera inspection has [there is displeasure which moreover drinks foreign matters, such as barium, and] the trouble of being accompanied by still much more pain, with the pain by the palpation at the time of a large intestine medical checkup.

[0005] This invention aims at offering the digestive system diagnostic equipment which can be diagnosed to aponia, quickness, cheapness, and high degree of accuracy with careful attention to the aforementioned point.

[0006]

[Means for Solving the Problem] It has a monitor TV which receives a micro CCD camera which picturizes the inside of a micro LED lamp which digestive system diagnostic equipment of this invention flows in a digestive system, and irradiates the inside of the network, and a network which it flowed in a network and was irradiated with a lamp, and outputs a picture signal, and a picture signal in order to solve said technical problem, and projects.

[0007]

[Function] A camera picturizes the wall of the digestive system irradiated with the lamp, a monitor TV projects the picture signal, and the sequential diagnosis of the digestive system is carried out as the lamp and camera move the digestive system diagnostic equipment of this invention constituted as mentioned above with an esophagus, the stomach, and intestines by drinking a micro LED lamp and a micro CCD camera.

[0008]

[Example] One example is explained with reference to a drawing. It is transparent resin with which the power supply section which consists of combination of batteries, such as a micro capacitor for stationary energy storage or a film battery with which the LED light emitting device (light emitting diode element) section from which 1 constitutes the micro LED lamp of the magnitude of a tablet degree, and 2 constitutes a lamp 1, and 3 were prepared

behind the element section 2, or said capacitor and battery, and 4 penetrate the receiving-circuit section for the element section 2, a power supply section 3, and the receiving-circuit section 4, and 5 penetrates a

[0009] The CCD element (charge-coupled device) section from which 6 constitutes the micro CCD camera of the magnitude of a tablet degree, and 7 constitutes a camera 6, the lens with which 8 was prepared in the anterior part of the CCD element section 7, and 9 are the reception-and-transmission circuit sections prepared behind the CCD element section 7 through the power supply section 3, and a lens 8, the CCD element section 7, a power supply section 3, and the reception-and-transmission circuit section 9 are covered with transparent resin 5 like the lamp 1.

[0010] The body and 11 are the oscillators for electric power supplies with which the stomach and 12 were prepared in intestines and 13 was prepared in the outside of the body, and 10 supplies power to the lamp 1 in the organ of the body 10, and the power supply section 3 of a camera 6.

[0011] 14 is a monitor TV, receives the picture signal from the camera 6 in the living body with an antenna 15, and projects it to a monitor TV 14 through the amplifying-circuit section 16. 17 is inspectors, such as a medical practitioner who diagnoses with a monitor TV 14.

[0012] On the occasion of a diagnosis, with the transparent body 18 which is gelatinous as for an agar, a liquid, for example, main **, with high viscosity, etc., and penetrates the trust electric wave from a carrier, and CCD induction light within an organ Drink two or more micro LED lamps 1 and micro CCD cameras 6, and power is supplied to the lamp 1 in the living body and the power supply section 3 of a camera 6 through the receiving-circuit section 4 and the reception-and-transmission circuit section 9 from the oscillator 13 for electric power supplies. The wall of a digestive system is irradiated by the LED light emitting device 2 of a lamp 1, it picturizes by the CCD element section 7 of a camera 6, and a picture signal is sent from the reception-and-transmission circuit section 9. This condition is drawing 1.

[0013] An antenna 15 receives the picture signal, it projects to a monitor TV 14 through the amplifying-circuit section 16, and an inspector 17 diagnoses. In this case, a picture signal is recorded on coincidence at VTR and CD-ROM.

[0014] A lamp 1 and a camera 6 carry out sequential observation of the stomach 11 and the intestines 12, finally observation of the rectum and the anus is finished, and these foreign matters are emitted to the outside of the body with a body 18.

[0015]

[Effect of the Invention] Since this invention is constituted as explained above, the effect indicated below is done so. Without being based on barium or gastrocamera like before by flowing the micro LED lamp 1 and micro CCD camera 6 in a digestive system, picturizing the wall of the digestive system irradiated with the lamp 1 with a camera 6, and projecting the picture signal to a monitor TV 14, the wall of a digestive system can be diagnosed with a quickly sufficient precision by aponia, and moreover, it is cheap and can diagnose at an early stage.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is diagnostic-state drawing of one example of the digestive system diagnostic equipment of this invention.

[Drawing 2] It is the perspective diagram of the micro LED lamp of drawing 1 .

[Drawing 3] It is the perspective diagram of the subminiature camera of drawing 1 .

[Drawing 4] It is the general drawing of this invention.

[Description of Notations]

1 Micro LED Lamp

6 Subminiature Camera

14 Monitor TV

[Translation done.]

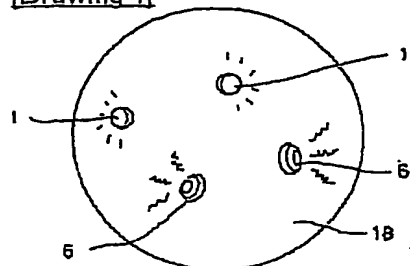
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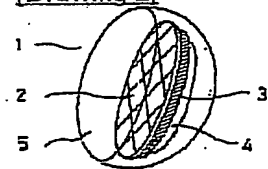
DRAWINGS

[Drawing 1]

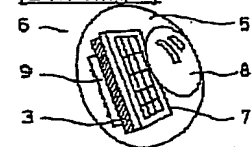


1. 超小型LEDランプ
6. 超小型カメラ
14. モニタテレビ

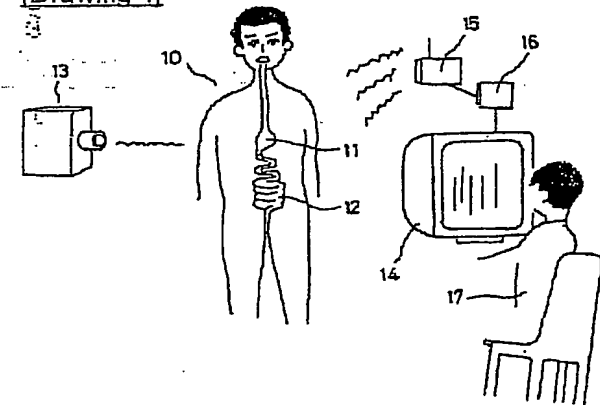
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]

[E]